## Indra: An Agent-Based Modeling System

### What Is a Model?

1. Models are constructed.  
   2) They are made of distinct parts. (E.g., "a supply curve, a demand curve, an x-axis, a y-axis," or "red lines for highways, black lines for local roads, dashed lines for dirt roads.")  
   3) The parts are made to fit together. (The supply curve is measured in the same units as the demand curve, and crosses it somewhere. The roads are laid out on the same grid, using the same scale.)  
   4) We can adjust those parts, either purely mentally, or with our hands (as with an architectural model), or a pencil and eraser (a mechanical drawing), a computer (a weather model), and so on. (In using a map, we actually adjust a "part" we will in: where we are. Sometimes, this part is represented by our finger, as we trace a route, or the mark of a highlighter.)  
   5) Adjusting the parts produces an "answer" of some sort from the model: "Oh-oh, if we move that wall there, the stairs won't fit," or "If the supply curve shifts that far right, the new price will be $4.50."  
   6) The modeler hopes that the answer produced by the model says something about what will happen when changes occur in (or are deliberately made to) the thing being modeled.

### How Indra Is Constructed

Object-oriented programming and agent models

Whitehead’s process philosophy

### Our Models

Schelling’s Height Model

Krugman’s Baby-Sitting Co-op

Schelling’s Segregation Model

A Predator-Prey Model

Adam Smith’s Fashion Model

Edgeworth Box Model

Barter Model

Menger Model